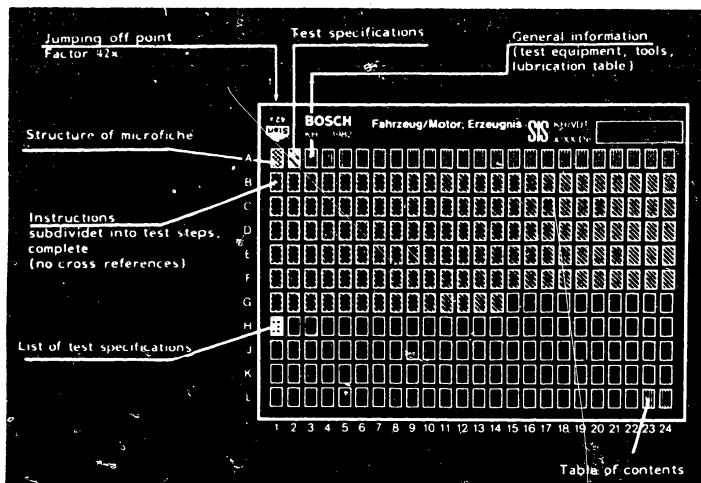


## Structure of microfiche



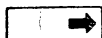
1. Read from left to right

2. Title of microfiche (appears on each coordinate)

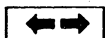
<b>E 16</b>	Product/assembly/test step	
	Vehicle/engine	

Coordinate

3. Limits of section



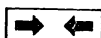
Beginning



Mid-section



End



One-page section

4. References to relevant test steps in test specifications; coordinate e.g. C6

**C 6**

**A1**

Repair and testing



## 1. Test specifications

For test specifications see microfiche

List of test specifications

W-237/1000

and microfiche

Test specifications for ignition distributors

W-237/1001...

Please refer to Coordinate H1 since, owing to the vast number of test specifications, it is not possible to present them here as is otherwise customary in the SIS system.

In the list of test specifications the part number of your ignition distributor is followed by the number of the microfiche and the coordinate on which you can find the corresponding test specifications.

The new test specifications must only be used together with the new distributor test bench ZVS 50 (0 683 400 200) and distributor test adapter KDZV 7202.

Reason: The advance curves have been matched to this equipment.



## 2. Test equipment and tools required for repair

1 Clamping fixture	KDZV 7221
1 Round-nose pliers	Commercially available
1 Circlip pliers	Commercially available
2 Screwdrivers	Commercially available
1 Punch < 2 mm $\varnothing$	Commercially available
1 offset screwdriver 3 mm	Commercially available

### 2.1 Test equipment and auxiliaries required for testing

Distributor test bench ZVS 50	0 683 400 200
Distributor test adapter	KDZV 7202
Voltage stabilizer	Commercially available
e.g. Gossen = 12 V/10 A	
or	
battery 12 V 84 Ah charged e.g.	0 183 058 411
Tachometer e.g. KTE 001.03	0 684 400 103
Voltmeter ETE 014.00 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 101 400
Voltmeter ETT 044 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 100 400
Voltmeter KTE 001.03 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 400 103
Voltmeter MOT 001.03 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 000 103
Voltmeter MOT 201 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 000 201
Voltmeter MOT 202 ( $R_i \geq 50 \text{ k}\Omega/\text{V}$ )	0 684 000 202
Multimeter	Commercially available
(with mA measuring range)	
Resistor 1.5 k $\Omega$ - 1 W $\pm$ 5%	Commercially available



### 3. Lubricants

Plain-bearing grease  
VS 14060 Ft 250g can  
Special oil  
01 1V13 0,5l can

Part numbers:  
5 964 520 125  
5 962 260 605

#### 3.1 Lubrication table

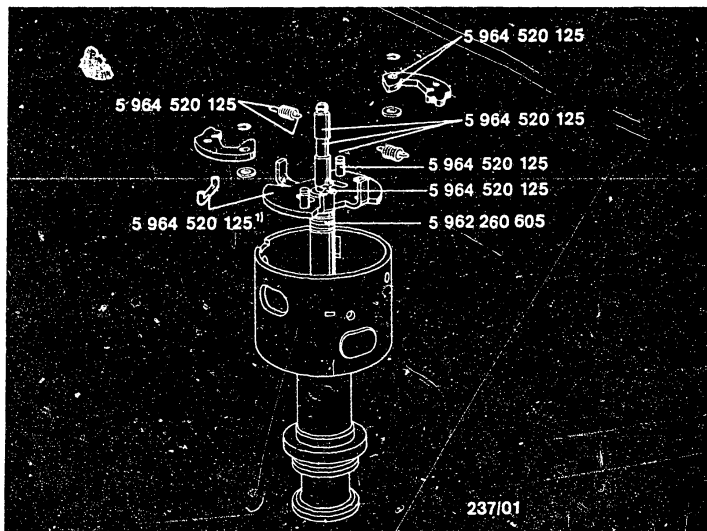
##### General

The following exploded views show the points which must be treated with the stated lubricants.

Pay particular attention to footnotes.

The exploded views cannot be used for the assembly of ignition distributors (incomplete).





Lubrication points and lubricants on the centrifugal advance mechanism

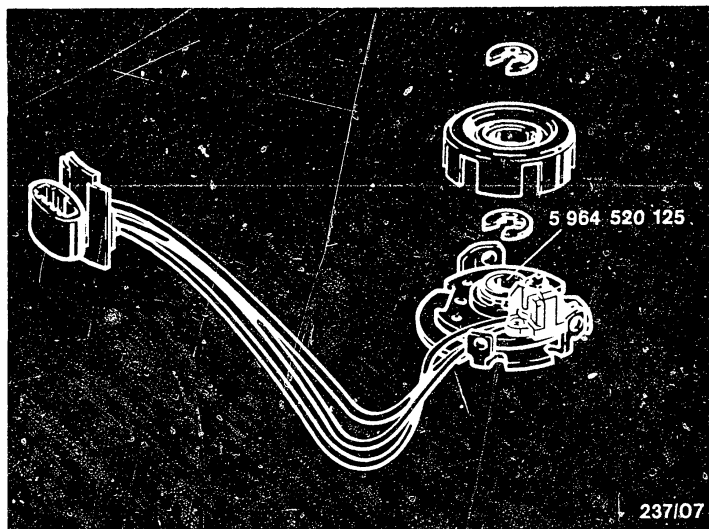
- 1) Grease the plastic rubbing block and running surface on shaft plate

**A5**

Lubrication table

Ignition distributor 0 237 .., ZV-H





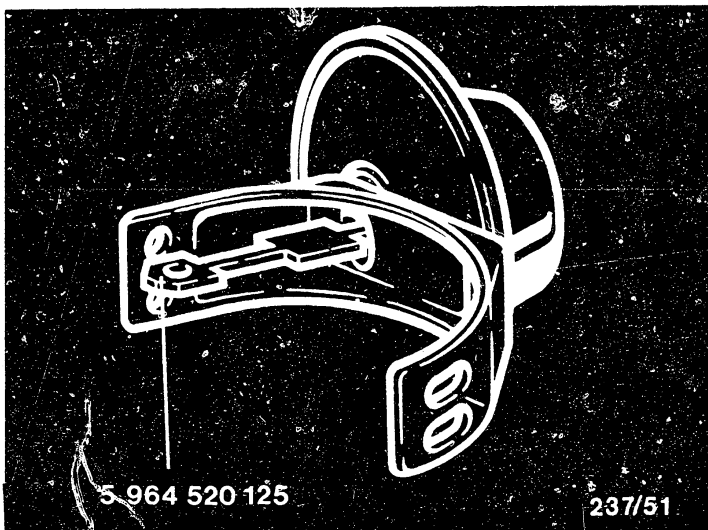
Lubrication point and lubricant on pulse generator.

**A6**

Lubrication table

Ignition distributor 0 237 .., ZV-H





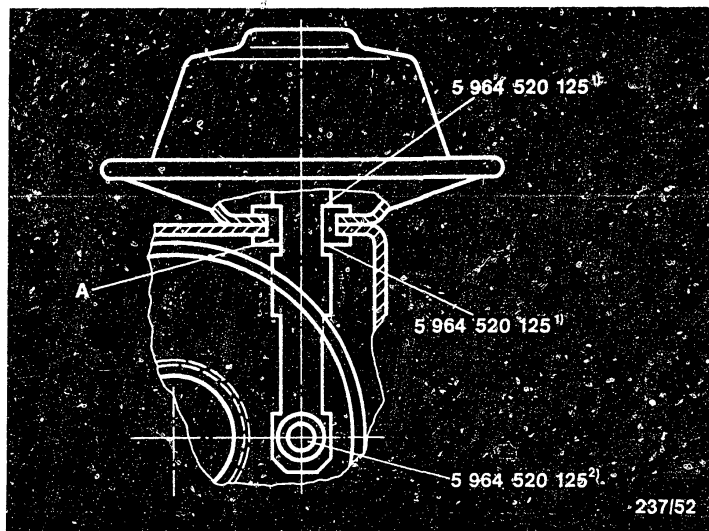
Lubrication point and lubricant on vacuum advance mechanism

**A7**

Lubrication table

Ignition distributor 0 237 .., ZV-H

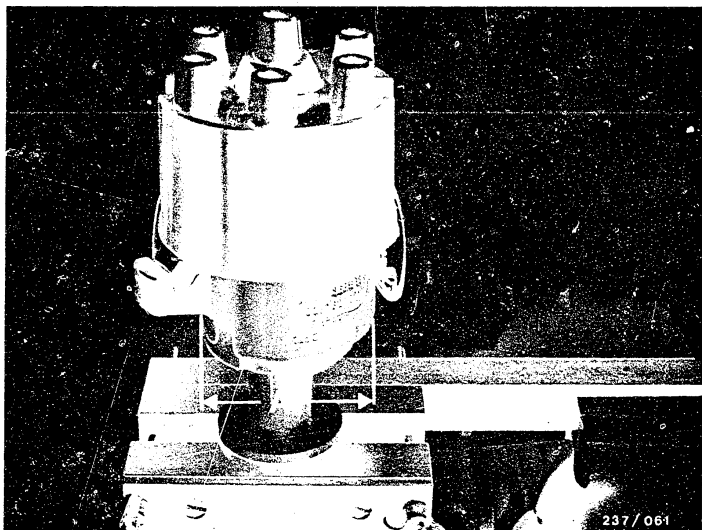




Lubrication points and lubricants on the improved vacuum advance mechanism with plastic stops (e.g. A)

- 1) Grease the stop surfaces
- 2) Grease the bore





A = Housing diameter

#### 4. Repairing the pulse generator

##### 4.1 Determining the size

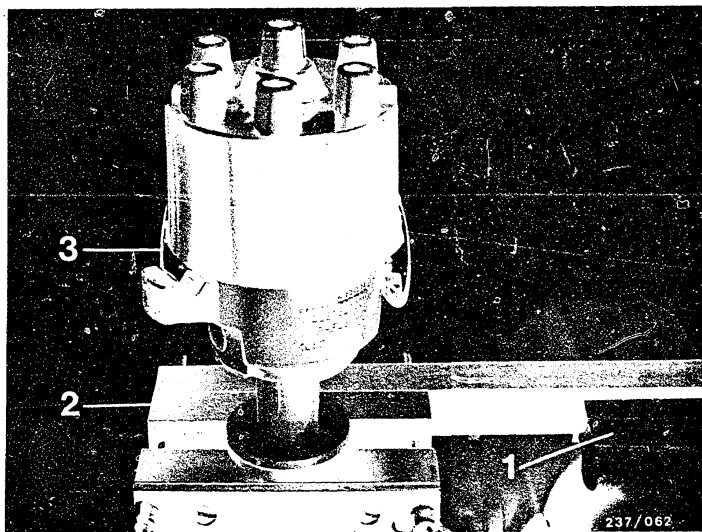
Ignition distributors come at present in 3 sizes.  
The distinguishing feature is the housing diameter.  
Example: 80 mm diameter (see picture).

**B1**

Repair, determining the size

Ignition distributor 0 237 ..., ZV-H





1 = Vise  
2 = Clamping fixture

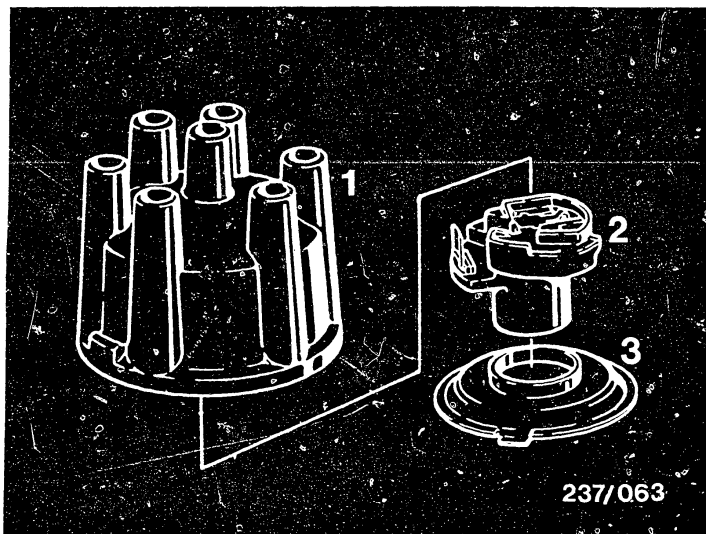
3 = Holding springs

#### 4.2 Removing the pulse generator

Clamp the ignition distributor with clamping fixture in a vise.

Caution: If the distributor is clamped without the clamping fixture, the bearing bushing will be damaged. Release the distributor cap holding springs with a screwdriver.

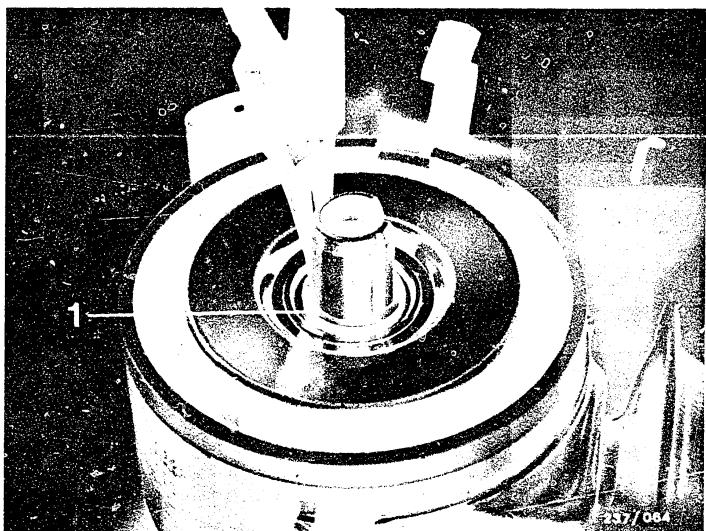




- 1 = Distributor cap
- 2 = Distributor rotor
- 3 = Dust-protection cover

Remove the distributor cap, distributor rotor and dust-protection cover.





1 = Retainer

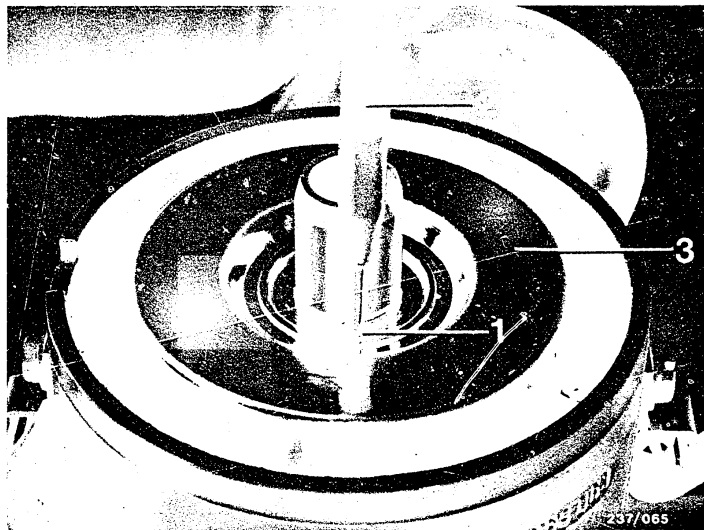
Remove the upper retainer using pliers. If there is a corrugated washer underneath it, remove it.

**B4**

Removing the pulse generator

Ignition distributor 0 237 ..., ZV-H





1 = Straight pin  
2 = Punch

3 = Trigger wheel

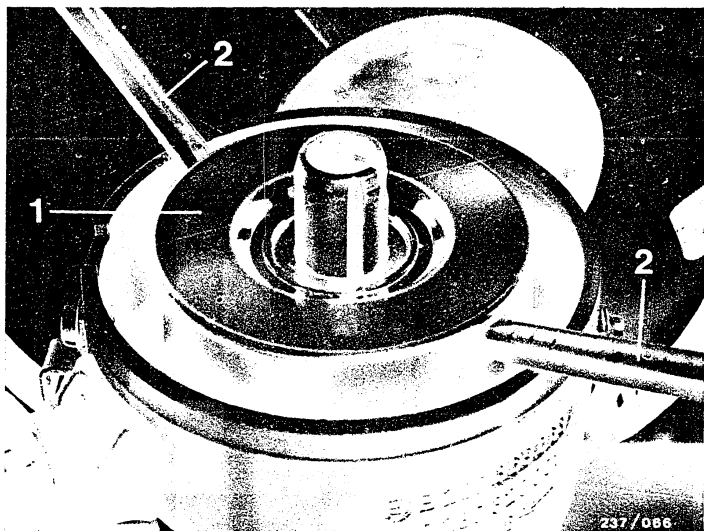
Using the punch, tap down the straight pin by approx. 0.5 mm (see picture).  
This makes it easier to remove (lever off) the trigger wheel.

**B5**

Removing the pulse generator

Ignition distributor 0 237 .., ZV-H





1 = Trigger wheel

2 = Screwdriver

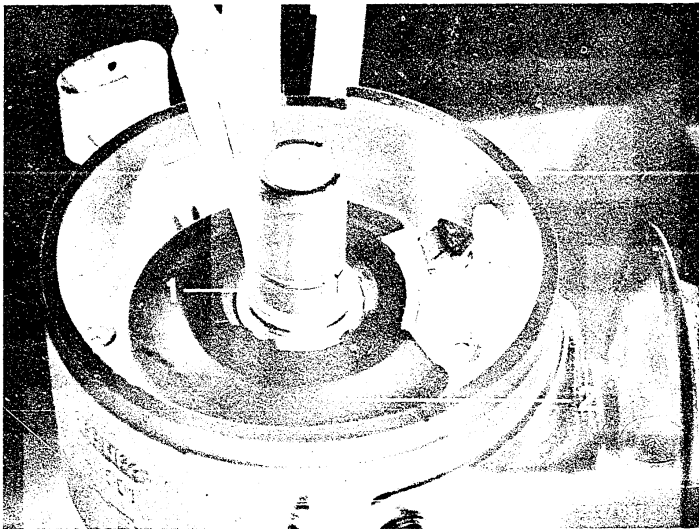
Using 2 screwdrivers, lever off the trigger wheel (see picture).

Apply the screwdrivers to the inside of the trigger wheel (greater stability).

If stiff, tap the straight pin downward once again.

Remove the loose straight pin from the ignition distributor (pulse generator).

Demolish the trigger wheel and scrap.



1 = Retainer

2 = Force-down device.

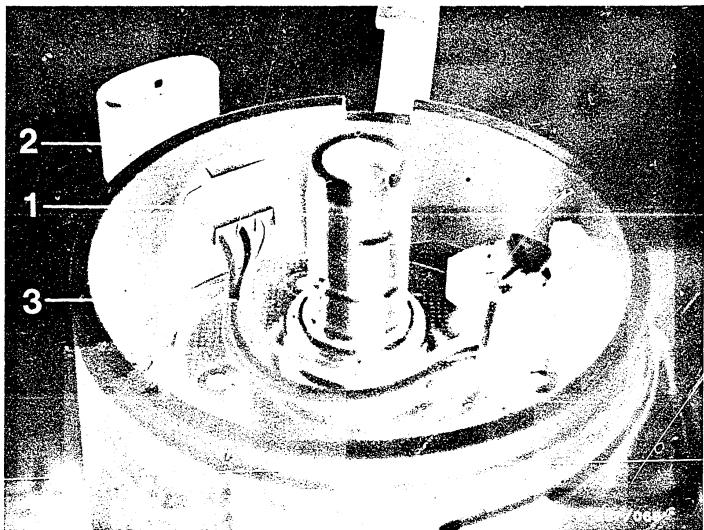
Using pliers, remove the lower retainer (see Fig.).

If fitted, remove the force-down device.

**B7**

Remove the magnetic pulse generator  
Ignition distributor 0 237 ..., ZV-H





1 = Locating plate

2 = Plug socket

3 = Electrical leads with plug housing

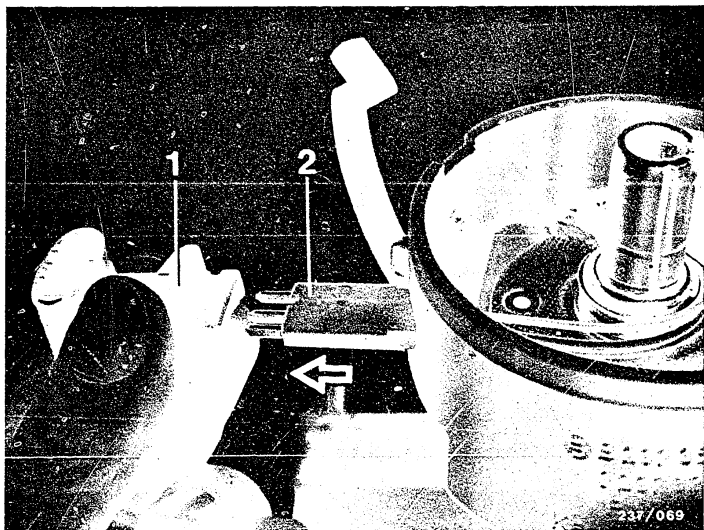
Pull the locating plate upwards.

**B8**

Remove the magnetic pulse generator

Ignition distributor 0 237 ..., ZV-H





1 = Plug

2 = Electrical leads with plug housing

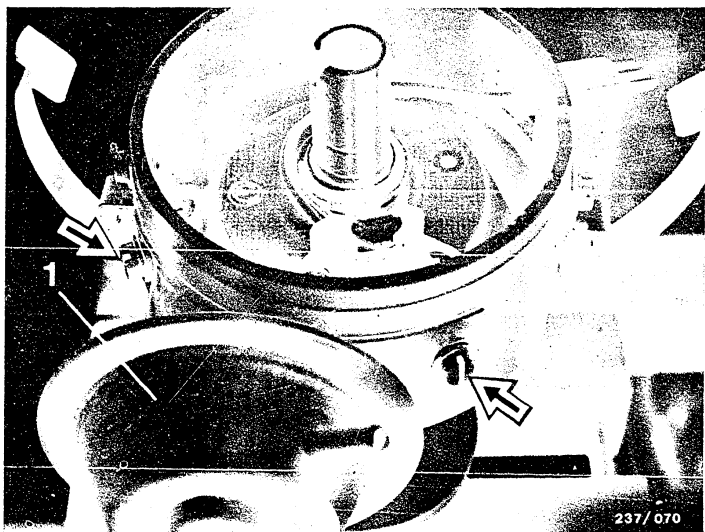
Pull the plug out of the ignition-distributor housing. Carefully pull the electrical leads together with the plug housing out of the plug.

**B9**

Remove the magnetic pulse generator

Ignition distributor 0 237 ..., ZV-H





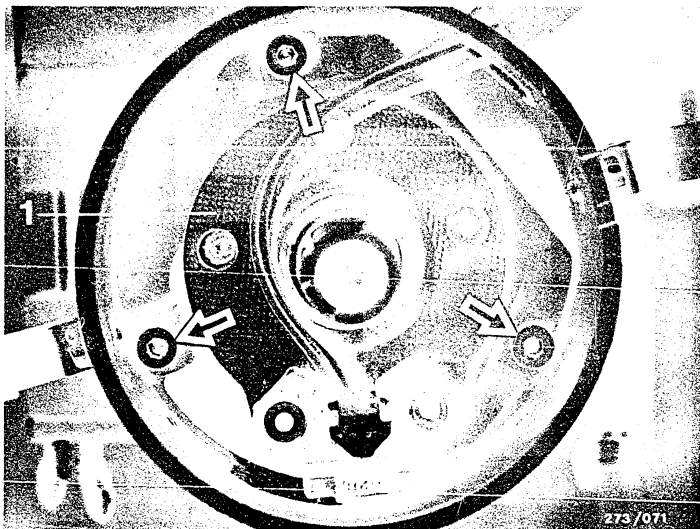
1 = Vacuum advance mechanism

Unscrew the screws (arrow) for the vacuum advance mechanism. Pull the vacuum advance mechanism downwards and out of the ignition-distributor housing.

**B10**

Remove the magnetic pulse generator  
Ignition distributor 0 237 ..., ZV-H





1 = Magnetic pulse generator

Unscrew the fastening screws (fillister-head screws with hexagon socket or Phillips-type, see arrow) from the magnetic pulse generator.

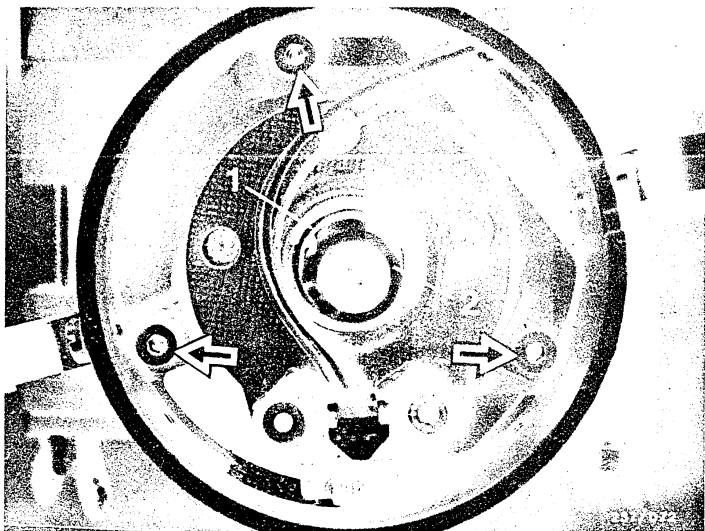
Pull the magnetic pulse generator out of the distributor housing.

**B11**

Remove the magnetic pulse generator

Ignition distributor 0 237 .... ZV-H





- 1 = Bearing bushing of the magnetic pulse generator  
 2 = Rotor sleeve

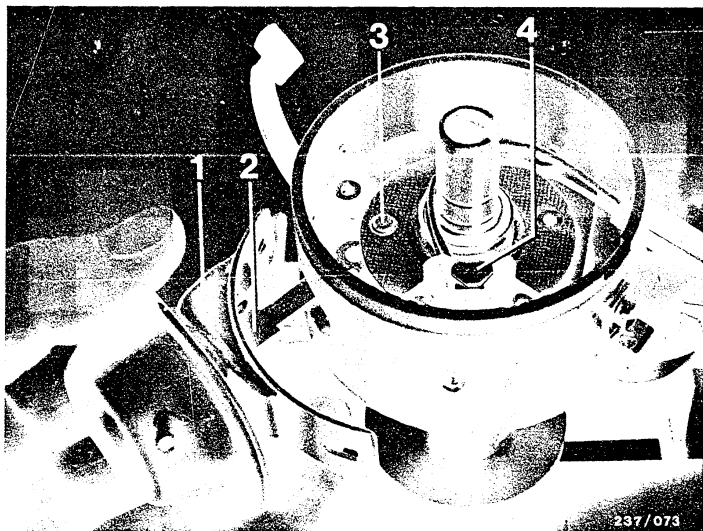
#### 4.3 Fitting the magnetic pulse generator

Fit the new magnetic pulse generator in the ignition-distributor housing. Screw-in the fastening screws (Fillister-head screw with hexagon socket or Phillips-type, arrows), and tighten lightly.

Visual check: Shift the magnetic pulse generator until there is a uniform air gap between the rotor sleeve and the bearing bushing of the magnetic pulse generator. Tighten the fastening screws.

Turn the distributor shaft by hand. The rotor sleeve must not touch the bearing bushing of the magnetic pulse generator.





1 = Vacuum advance mechanism  
2 = Tie rod

3 = Bearing pin  
4 = Magnetic pickup assembly

Turn the magnetic pickup assembly as far as it will go against the direction of rotation of the distributor and hold in that position.

Introduce the vacuum advance mechanism into the distributor housing and hook the tie rod into the bearing pin of the pulse generator.

While loosely installed, move the vacuum advance mechanism to and fro and check whether the magnetic pickup assembly moves.

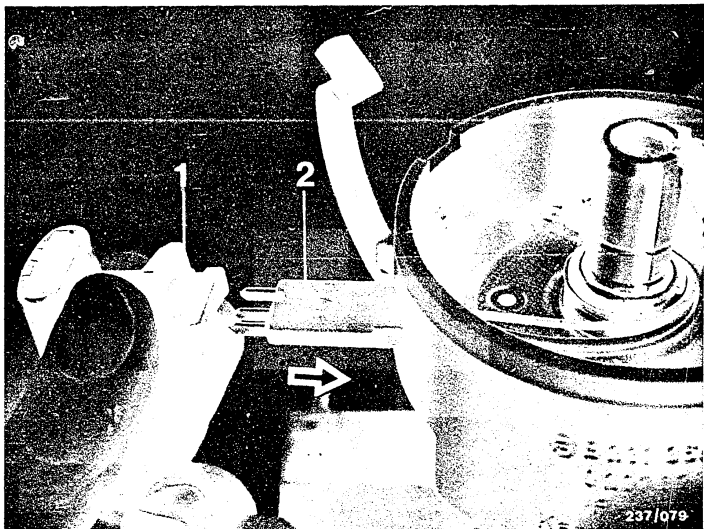
Position the screws of the vacuum advance mechanism and holding springs and tighten.

**B13**

Installing the pulse generator

Ignition distributor 0 237 .., ZV-H





1 = Plug

2 = Electric leads with plug housing

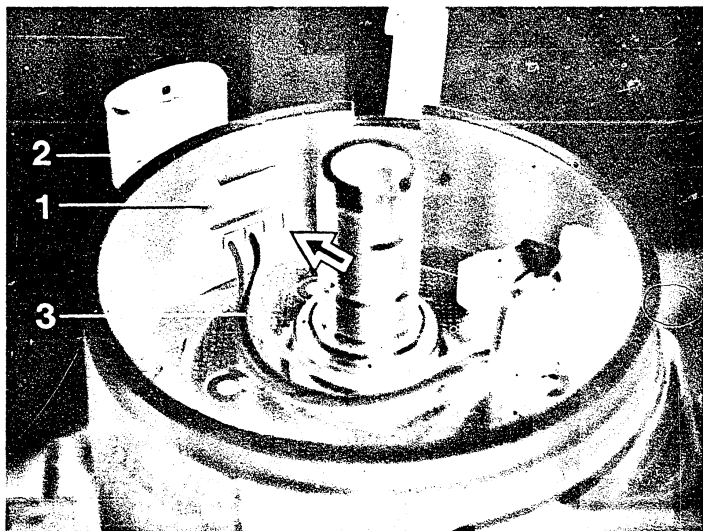
Push the electric lead together with the plug housing into the plug as far as it will go.  
Fit the plug in the ignition-distributor housing.

Note: The leads must not be twisted.

**B 14**

Remove the magnetic pulse generator  
Ignition distributor 0 237 ..., ZV-H





1 = Locating plate

2 = Plug

3 = Electrical leads with plug housing

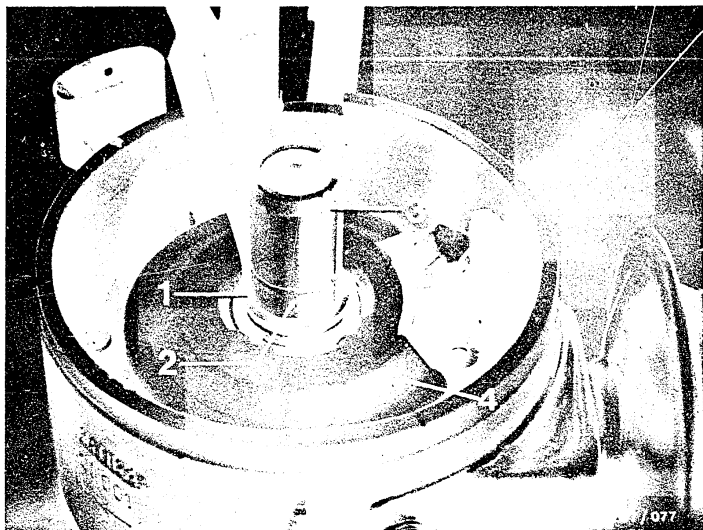
The plug housing must be flush with the plug (see arrow).

Fit the locating plate.

**B 15**

Remove the magnetic pulse generator  
Ignition distributor 0 237 ..., ZV-H





1 = Retainer  
2 = Rotor sleeve

3 = Rotor-sleeve groove  
4 = Force-down device

Fit the lower retainer with its opening offset by 180° to the rotor-sleeve groove.

Caution: The retainer must have engaged fully around its complete circumference.

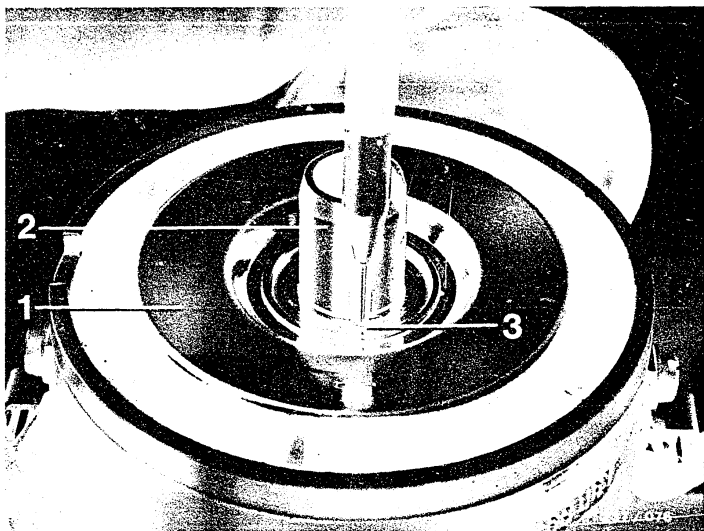
If required, fir the force-down device.

**B 16**

Remove the magnetic pulse generator

Ignition distributor 0 237 .... ZV-H





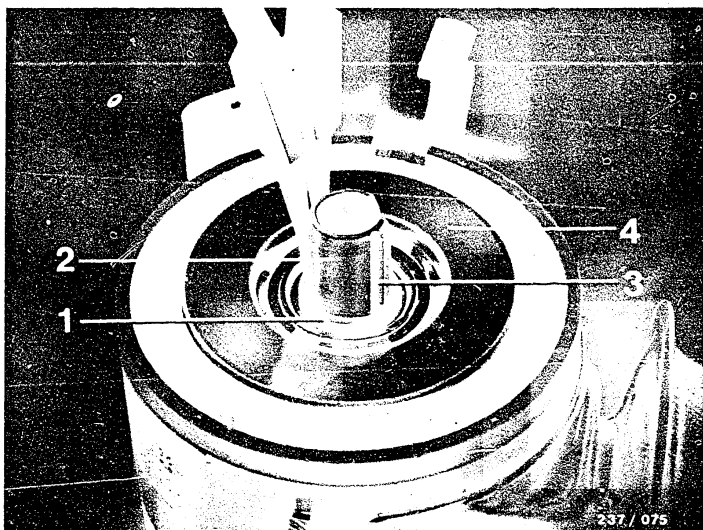
- 1 = Trigger wheel
- 2 = Rotor sleeve
- 3 = Straight pin

Slide the new trigger wheel over the rotor sleeve and press down as far as it will go.

Bring the grooves in the trigger wheel and the rotor sleeve into alignment.

Introduce the straight pin into the groove and drive in with a punch until the straight pin is flush with the trigger wheel.





1 = Retainer  
2 = Rotor sleeve

3 = Rotor sleeve groove  
4 = Trigger wheel

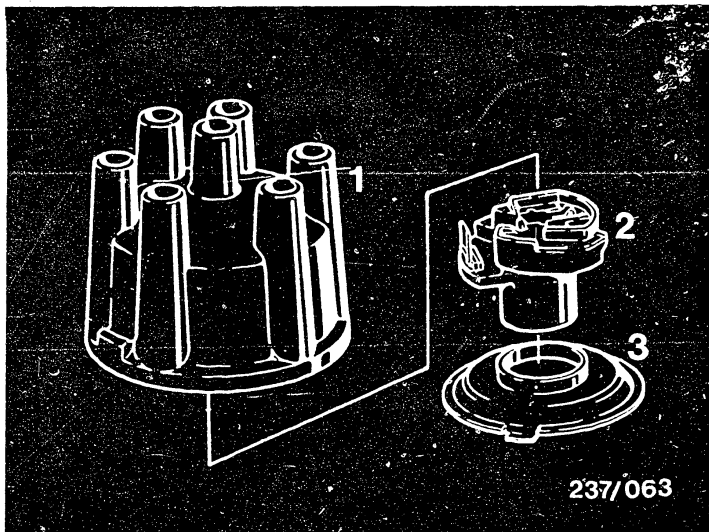
If fitted previously, slip the corrugated washer over the rotor sleeve. Fit the upper retainer with the opening at 180° to the rotor sleeve groove.

Caution: The retainer must be latched in position all the way round.

Turn the distributor shaft by hand.

The trigger wheel must not brush against the magnetic pickup assembly.





- 1 = Dust-protection cover
- 2 = Distributor rotor
- 3 = Distributor cap

Install the dust-protection cover, distributor rotor and distributor cap.



## 5. Testing

### 5.1 Test instructions

All speeds given in the test specifications refer to the drive shaft of the ignition distributor. The direction of rotation of the distributor (viewed looking down on the distributor cap) is given in the type designation, e.g.

IFU4 + = clockwise rotation → = counterclockwise rotation

or

Z 415 + = clockwise rotation → = counterclockwise rotation:

#### Caution!

The holding springs of the distributor cap must not fall into the generator system when the distributor shaft is driven with the dust-protection cover removed.

Be very careful when working with an open ignition distributor. No metal chips must be allowed to enter the generator system (the air gap could be bridged by a metal chip).

Only drive the ignition distributor with the drive gear or coupling mounted in place (incorrect measurements can result from excessive longitudinal play in the distributor shaft).

Perform the measurements at room temperature and at the stated voltage.

The ignition vane switch will be destroyed in the case of incorrect polarity.



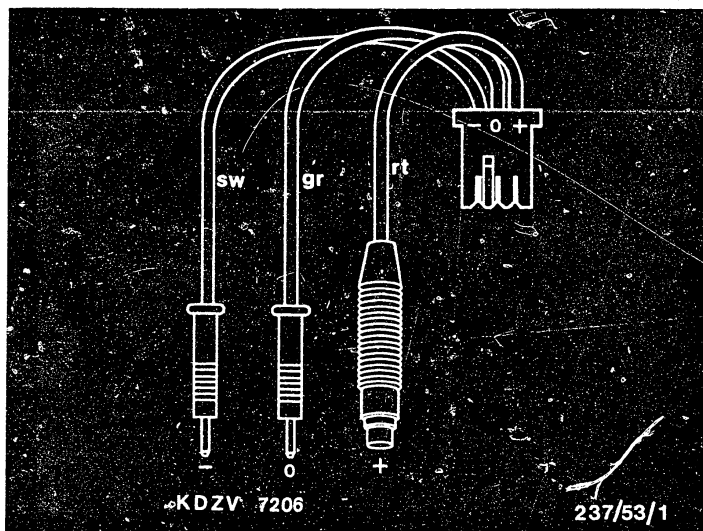
## 5.2 Visual examination

The distributor cap and the distributor rotor must be clean and must have no cracks or leakage paths.

The original lead must be installed and the connections must be tight and not damaged.

The distributor rotor, trigger wheel and ignition vane switch must not show any damage and the distributor rotor must be firmly positioned on the distributor shaft. It must be possible to turn the distributor shaft by hand and the trigger wheel must not graze the ignition vane switch.

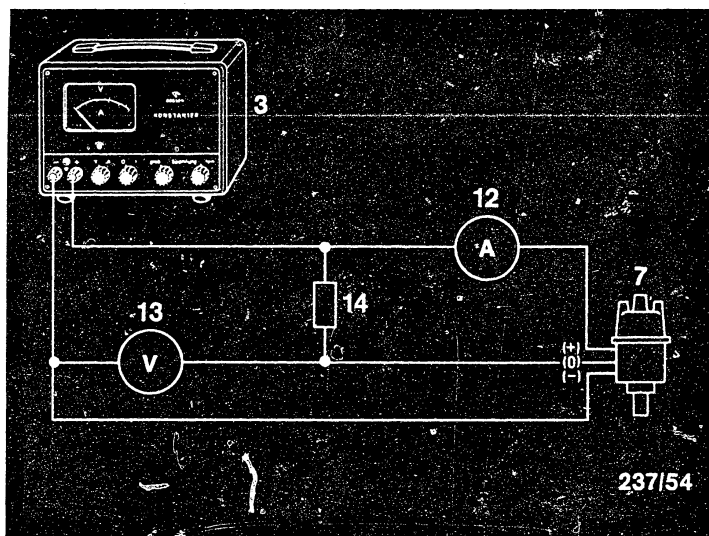




### 5.3 Preparations for testing

The connecting cable KDZV 7206 is required for testing the pulse generator system, the centrifugal advance and the vacuum advance.



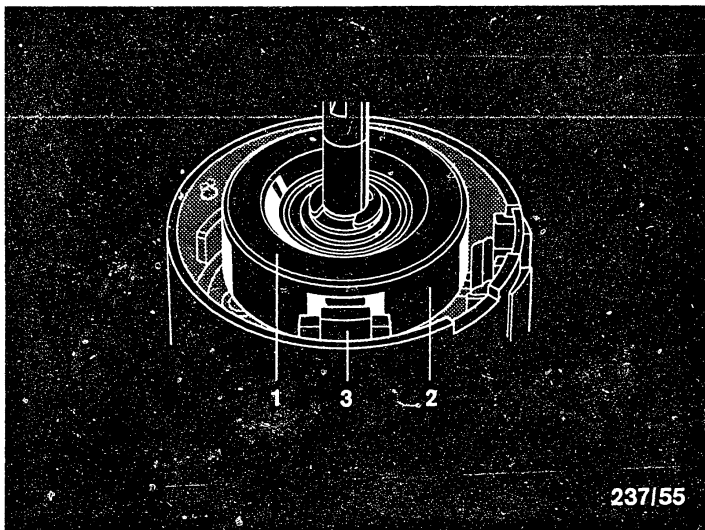


- 3 = Voltage stabilizer/battery
- 7 = Ignition distributor
- 12 = Ammeter
- 13 = Voltmeter
- 14 = Resistor 1.5 k $\Omega$

#### 5.4 Testing the pulse generator system - magnetic pick-up assembly "ON"

Switch on the voltage stabilizer and set to 12 V. Switch off the voltage stabilizer. Mount the ignition distributor on the distributor test bench and connect in accordance with the above terminal diagram.

Follow the operating instructions of the individual testers.

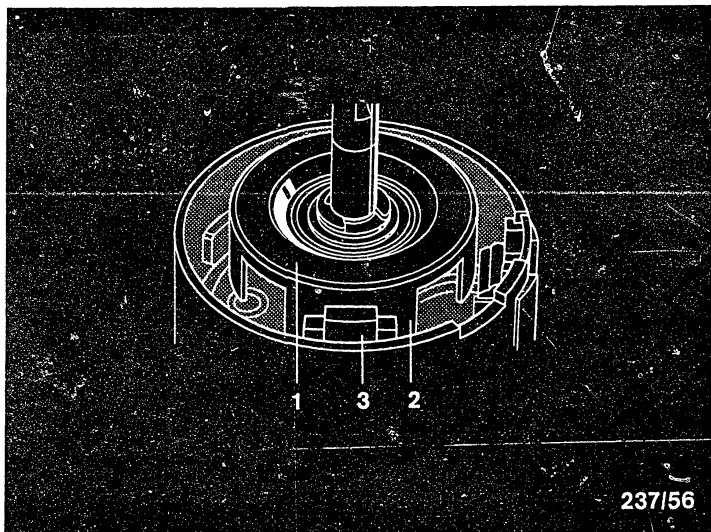


- 1 = Trigger wheel
- 2 = Vane
- 3 = Ignition vane switch

Turn distributor shaft by hand until vane is outside air gap of ignition vane switch (see illustration).

Switch on voltage supply.

The voltmeter may indicate max. 0.4 V, the ammeter max. 20 mA.



237/56

- 1 = Trigger wheel
- 2 = Vane
- 3 = Ignition vane switch

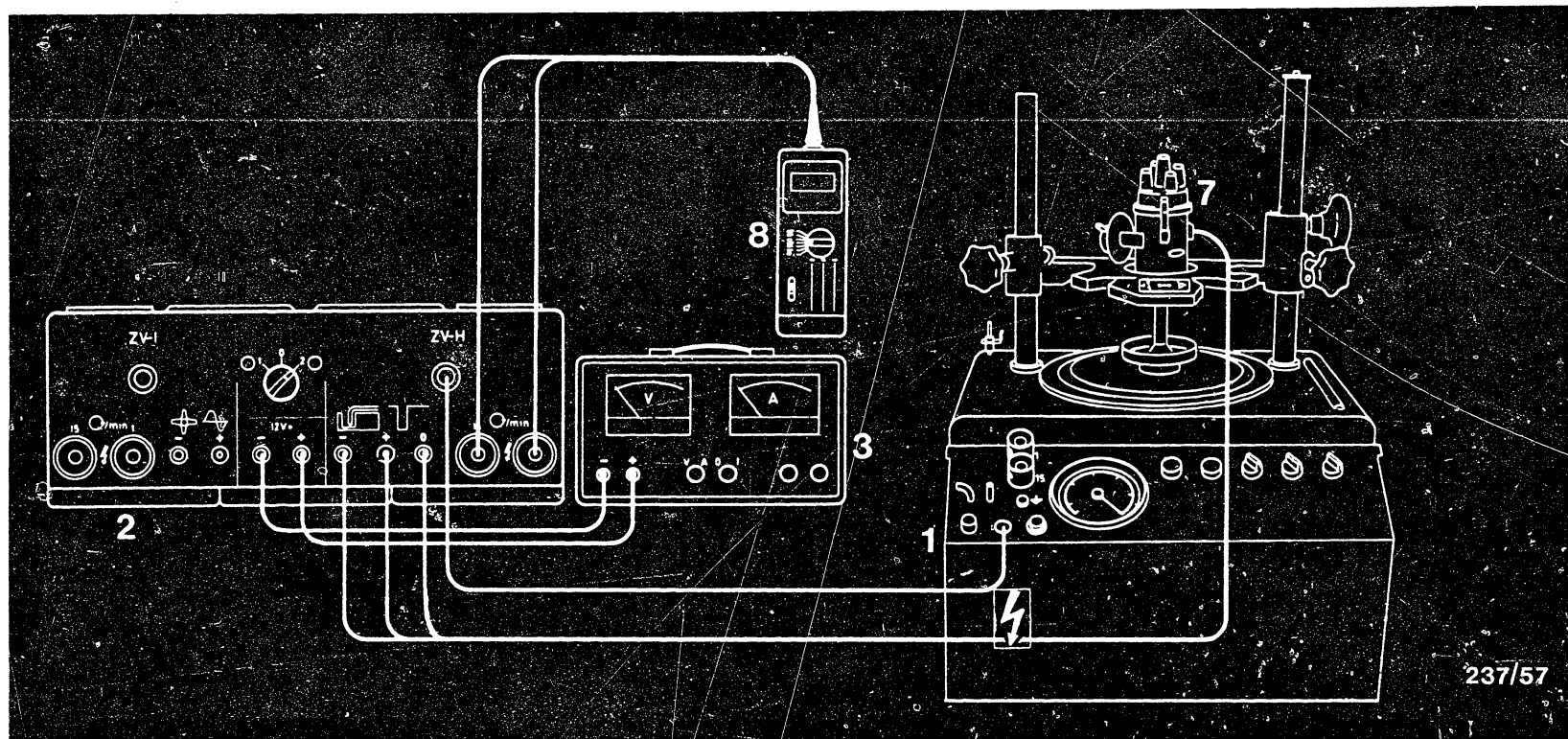
#### 5.5 Testing the pulse generator system - magnetic pick-up assembly "OFF"

Turn distributor shaft by hand until vane (2) is completely in air gap of ignition vane switch (3) (see illustration).

The voltmeter must indicate min. 11V.

If the stated values are not reached, the ignition vane switch is defective.

Switch off the voltage supply.



1 = Distributor test bench  
 2 = Distributor test adapter (ZV-H)  
 3 = Voltage stabilizer/battery

7 = Ignition distributor  
 8 = Tachometer

#### 5.6 Testing the centrifugal advance (test specifications W-237/1001...)

For testing the centrifugal advance curve, use only the ZV-H test adapter KDZV 7202 specified in the test specifications.

Mount the ignition distributor and connect to the testers and the ZV-H test adapter in accordance with the above terminal diagram. Follow the operating instructions of the individual testers.

**C7**

Testing

Ignition distributor 0 237 ..., ZV-H

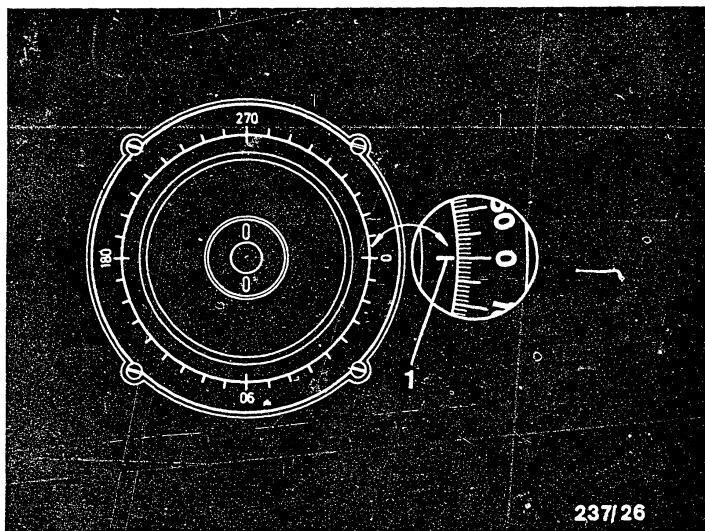


**C8**

Testing

Ignition distributor 0 237 ..., ZV-H





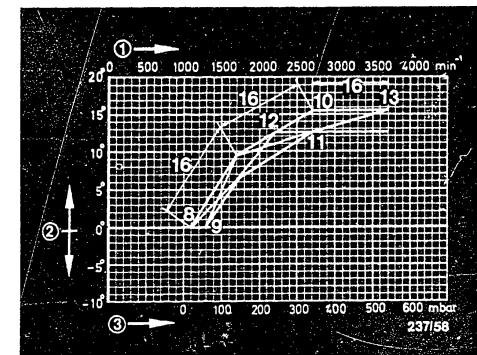
237/26

1 = Illuminated mark

Switch on the 12V voltage supply.  
 Drive the ignition distributor at a speed  $100 \text{ min}^{-1}$   
 below the speed of the earliest start of centrifugal  
 advance (see test specifications).  
 Then turn the scale ring of the distributor test bench  
 or the ignition distributor so that the illuminated  
 mark of a cylinder lights up at  $0^\circ/360^\circ$  (zero point).  
 See illustration. Tighten locking screw of ignition  
 distributor or clamping ring of chuck.

The most practical method of testing the centrifugal advance is to proceed so that each curve is checked at least twice in every range covered by a change in curve direction, and at least twice in the final control range. The test is only to be carried out with increasing speed. (This avoids measurement errors). Read off the advance angle and compare it with the test specifications. See figure for examples. If an addition to the tolerance range of  $\pm 0.5^\circ$  is given in the test specifications, the upper line of the tolerance range must be extended by  $0.5^\circ$  to the top, and the lower line by  $0.5^\circ$  to the bottom. If the specified values are not reached, the ignition distributor (advance system) is defective.

Switch off the voltage supply.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 8/9 = Start of centrifugal advance
- 10/11 = End of centrifugal advance
- 12/13 = In extreme cases the end of centrifugal advance may be located here
- 16 = Change in curve direction

**C10**

Testing

Ignition distributor 0 237 ..., ZV-H

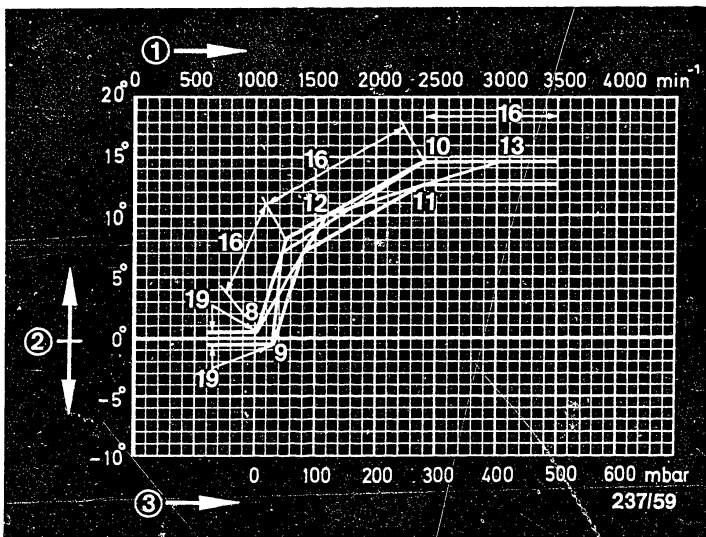


**C11**

Testing

Ignition distributor 0 237 ..., ZV-H



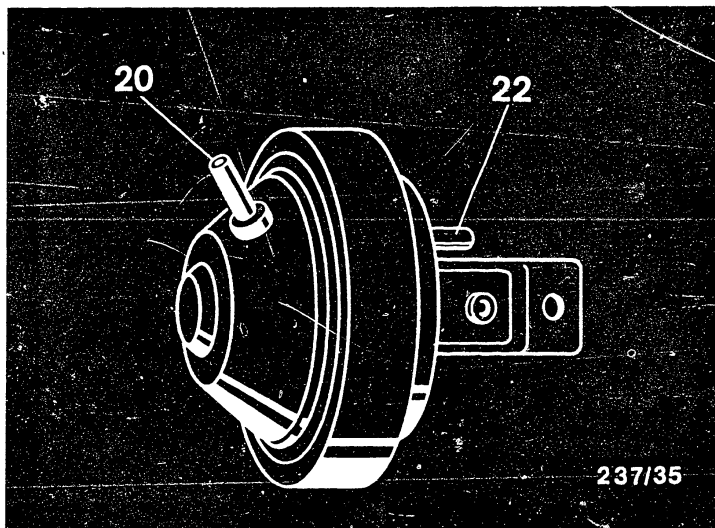


- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 8/9 = Start of centrifugal advance
- 10/11 = End of centrifugal advance
- 12/13 = In extreme cases the end of centrifugal advance may be located here
- 16 = Change in curve direction
- 19 = "Adjustment base"

#### Advance curve with "adjustment base" (19)

After the zero point adjustment of the distributor test bench (scale ring) it is possible, without the centrifugal advance operating, for there already to be a slight advance (max.  $0.50^\circ$ ) although the actual centrifugal advance only starts at points 8/9.





20 = Vacuum connection "advance"

22 = Vacuum connection "retard"

Note: According to DIN the term "vacuum" should be replaced by negative "gauge pressure". For the sake of clarity, however, we will continue to use "vacuum".

### 5.7 Testing the vacuum advance

#### 5.7.1 Testing the vacuum unit for leaks (not given in test specifications)

Connect the vacuum hose from the distributor test bench to the vacuum unit.

Using the vacuum pump, increase the vacuum until 600 mbar is reached. Switch off the vacuum pump.

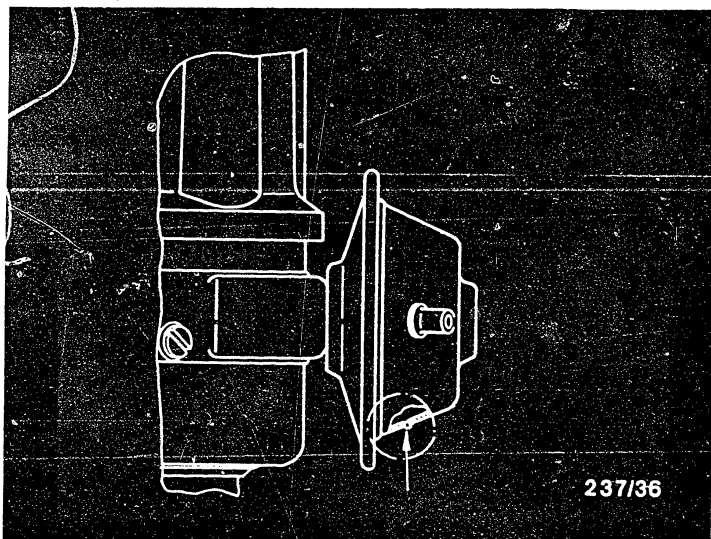
The maximum permissible pressure drop in 1 minute is 20%. Remedy any leaks found at the connection. Replace vacuum-advance mechanism if leaking.

**C14**

Testing

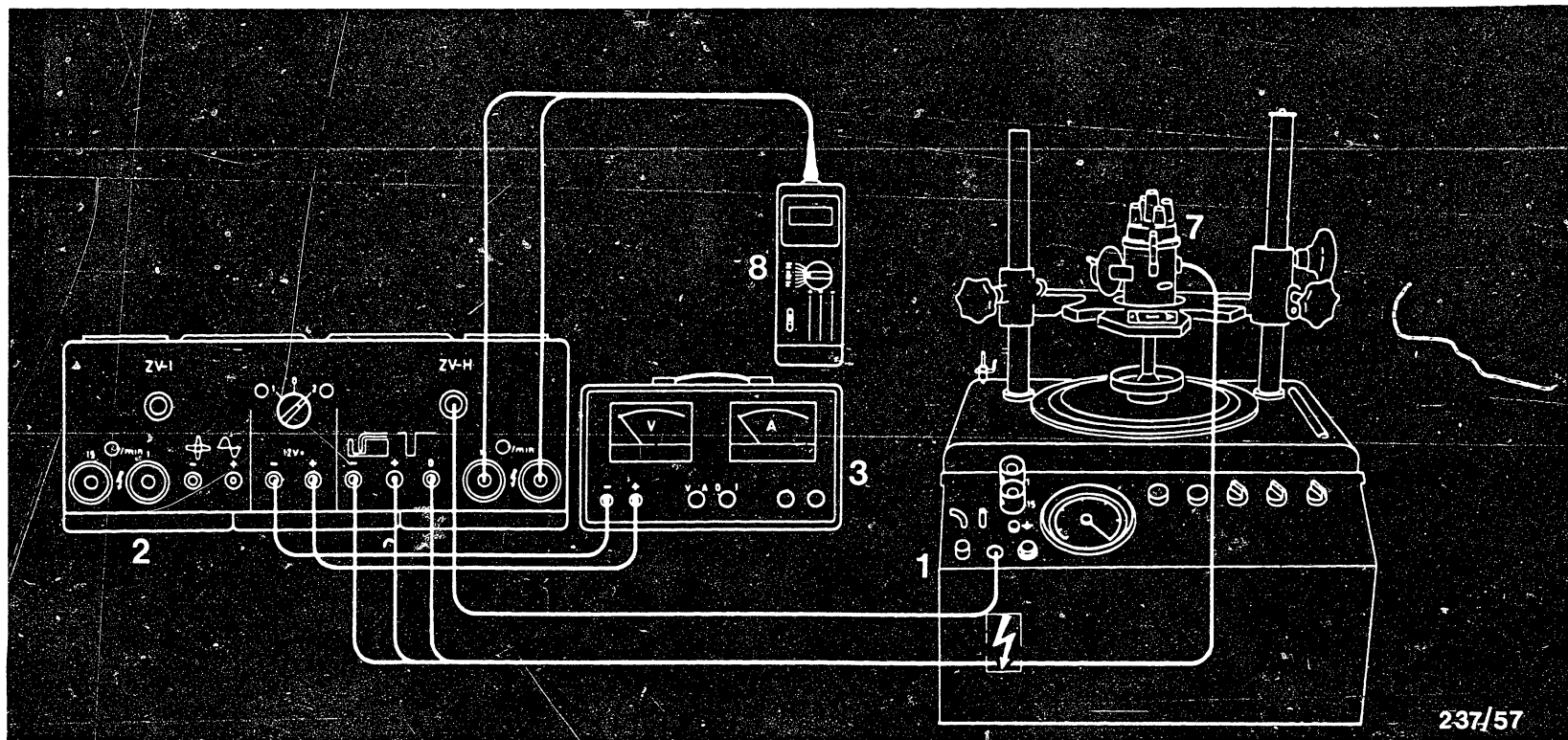
Ignition distributor 0 237 .., ZV-H





If there is an extremely heavy drop in pressure, check whether the vacuum unit is of the type which has a vent hole (approx. 0.5 mm diameter). See picture, arrow.

Seal off the hole while testing for leaks.



1 = Distributor test bench  
 2 = Distributor test adapter (ZV-H)  
 3 = Voltage stabilizer/battery

7 = Ignition distributor  
 8 = Tachometer

#### 5.7.2 Testing the centrifugal advance (test specifications W-237/1001...)

For testing the centrifugal and vacuum advance curve, use only the ZV-H test adapter KDZV 7202.

Connect the ignition distributor, testers and ZV-H test adapter in accordance with the above terminal diagram. Follow the operating instructions of the individual testers.

**C16**

Testing

Ignition distributor 0 237 ..., ZV-H

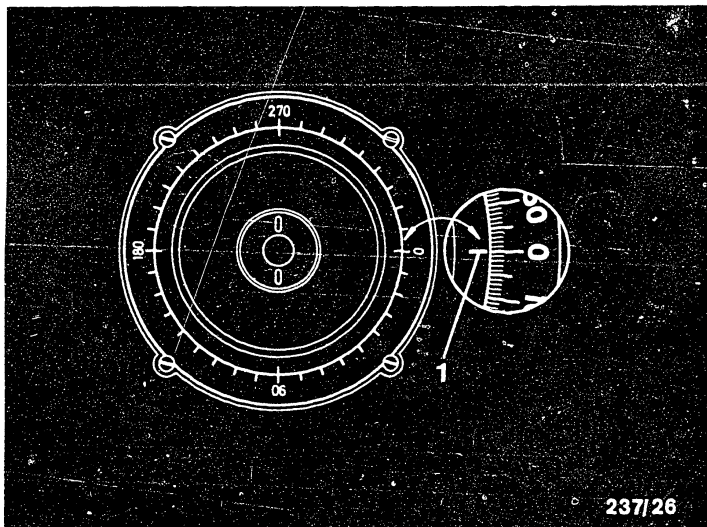


**C17**

Testing

Ignition distributor 0 237 ..., ZV-H





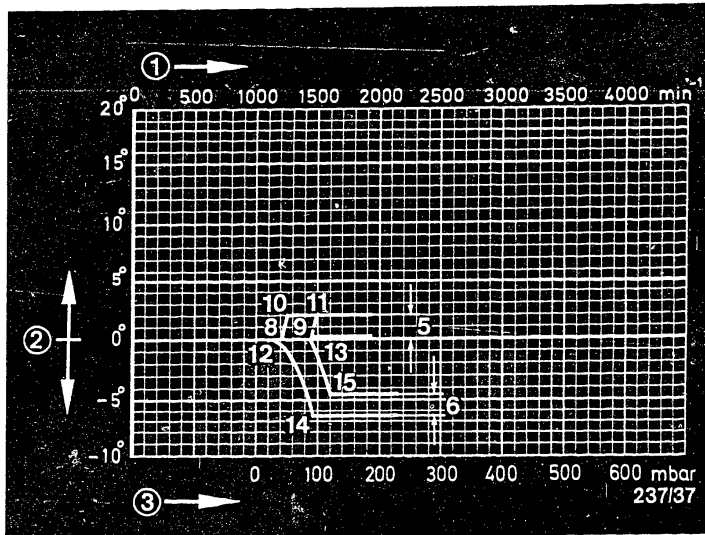
1 = Illuminated mark

Switch on the 12 V voltage supply.

Drive the ignition distributor at a speed  $200 \text{ min}^{-1}$  above the end of centrifugal advance (see test specifications).

Then turn the scale ring of the distributor test bench or the ignition distributor so that the illuminated mark of a cylinder lights up at  $0^\circ/360^\circ$  (zero point). See illustration.

Tighten locking screw of ignition distributor or clamping ring of check.



- |  |  |
|--|--|
| 1 = Distributor-shaft speed                  | 8/9, 12/13 start of vacuum advance "advance and retard unit" |
| 2 = Distributor-shaft advance                |  |
| 3 = Negative gauge pressure (vacuum)         | 10/11, 14/15 end of vacuum advance "advance and retard unit" |
| 5 = Negative gauge pressure (vacuum) advance |  |
| 6 = Negative gauge pressure (vacuum) retard  |  |

With increasing vacuum, check whether the advance angle is within the stated tolerance range. See figure for example.

If an addition to the tolerance range of  $\pm 0.5^\circ$  is given in the test specifications, the upper line must be extended by 0.5° to the top and the lower line by 0.5° to the bottom.

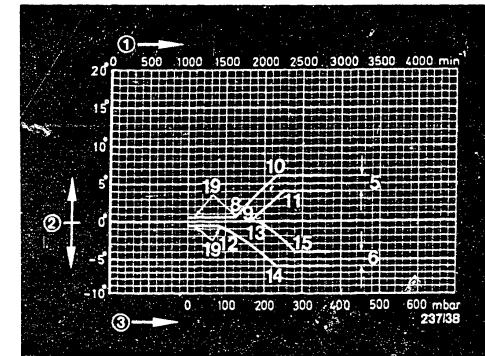


If the measured values are not within the tolerance range, then check the breaker-plate assembly and the tie rod for freedom of movement.  
After reaching the end of advance, an increase in the vacuum must not result in a further advance.

Switch off the voltage supply.

#### Advance curve with "adjustment base" (19)

After the zero-point adjustment of the distributor test bench (scale ring) it is possible, with increasing vacuum, for there already to be a slight advance (max.  $0.5^\circ$ ) although the actual vacuum advance only starts at points 8/9 or 12/13.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 5 = Negative gauge pressure (vacuum) advance
- 6 = Negative gauge pressure (vacuum) retard
- 8/9, 12/13 = Start of vacuum advance "advance and retard unit"
- 10/11, 14/15 = End of vacuum advance "advance and retard unit"
- 19 = "Adjustment base"

**C20**

Testing

Ignition distributor 0 237 .., ZV-H



**C21**

Testing

Ignition distributor 0 237 .., ZV-H



## 5.8 Testing the vacuum/overpressure advance - pressure unit with one or two connecting pipes

### 5.8.1 Testing the vacuum or overpressure unit for leaks (not given in test specifications)

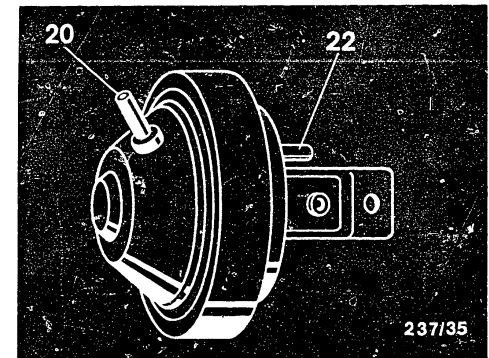
Connect the vacuum hose from the distributor test bench to the pressure unit.

In the case of the vacuum/overpressure unit with double retard, the overpressure unit is also tested for leaks using vacuum.

In the case of the vacuum/overpressure unit with one connecting pipe, the advance and retard unit is tested for leaks using vacuum.

Using the vacuum pump, increase the vacuum until 600 mbar is reached. Switch off the vacuum pump.

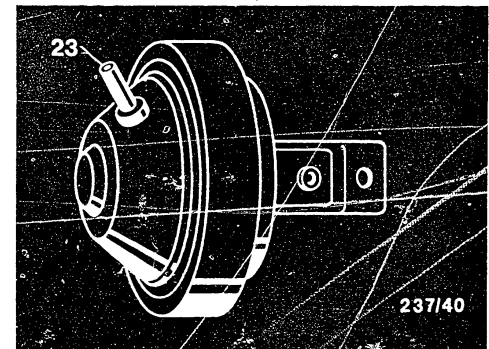
The max. permissible pressure drop in 1 minute is 20%. Remedy any leaks at the connection. Replace vacuum-advance mechanism if leaking.



20 = Vacuum connection  
"retard"

22 = Overpressure connection  
"retard"

23 = Vacuum connection  
"advance"  
and  
overpressure connection  
"retard"



**C22**

Testing

Ignition distributors 0 237..., ZV-H

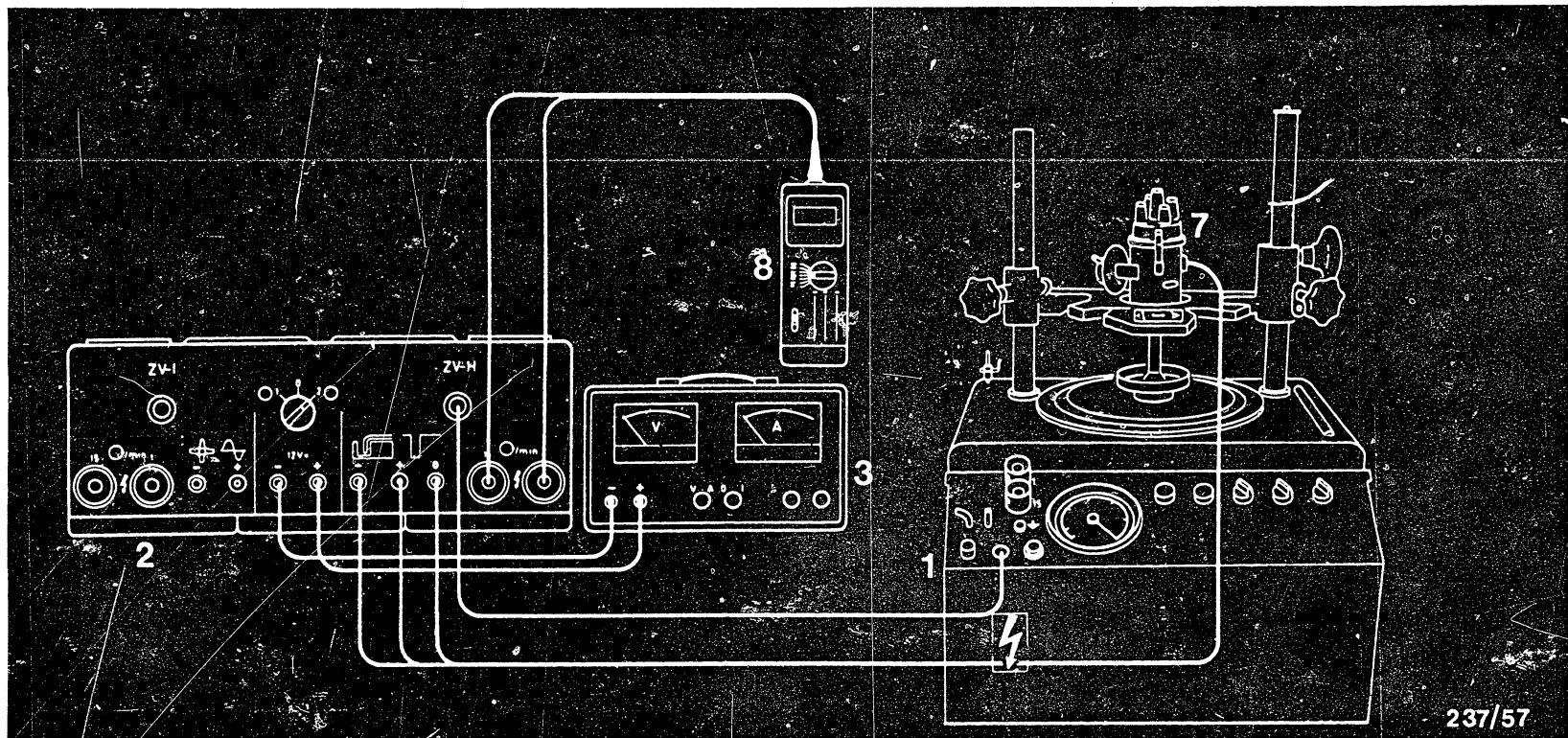


**C23**

Testing

Ignition distributors 0 237..., ZV-H





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- |                                     |                          |
|-------------------------------------|--------------------------|
| 1 = Distributor test bench          | 7 = Ignition distributor |
| 2 = Distributor test adapter (ZV-H) | 8 = Tachometer           |
| 3 = Voltage stabilizer/battery      |                          |

#### 5.8.2 Vacuum advance curve ( test specifications W-237/1001)

For testing the centrifugal and vacuum advance curve, use only the ZV-H test adapter KDZV 7202.

Connect the ignition distributor, testers and ZV-H test adapter in accordance with the above terminal diagram. Follow the operating instructions of the individual testers.

**D1**

Testing

Ignition distributor 0 237 ..., ZV-H

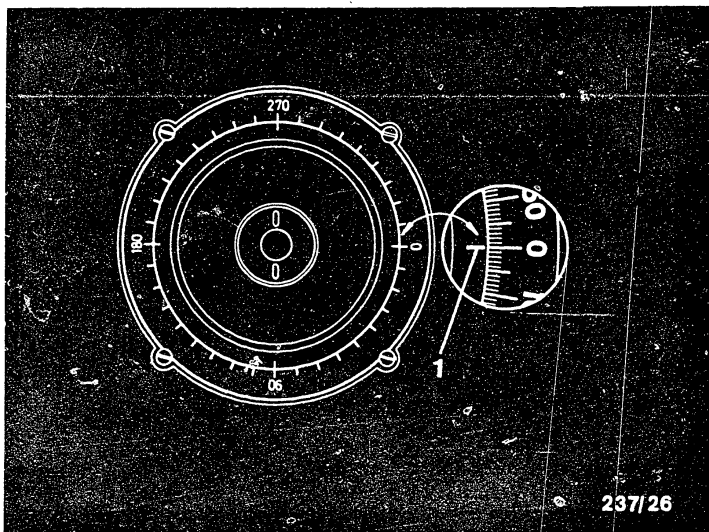


**D2**

Testing

Ignition distributor 0 237 ..., ZV-H





237/26

1 = Illuminated mark

Switch on the 12 V voltage supply.

Drive the ignition distributor at a speed  $200 \text{ min}^{-1}$  above the end of centrifugal advance (see test specifications).

Then turn the scale ring of the distributor test bench or the ignition distributor so that the illuminated mark of a cylinder lights up at  $0^\circ/360^\circ$ .

See illustration.

Tighten locking screw of ignition distributor or clamping ring of chuck.

**D3**

Testing

Ignition distributor 0 237 ..., ZV-H



With increasing vacuum, check whether the advance angle is within the stated tolerance range. See figure for example.

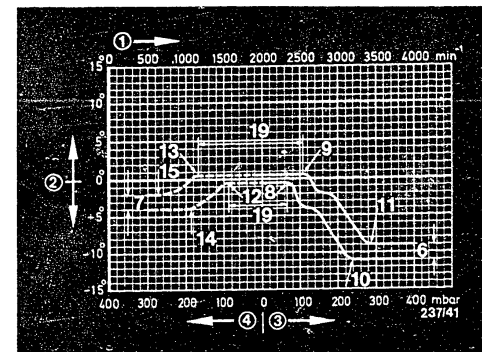
If an addition to the tolerance range of  $\pm 0.5^\circ$  is given in the test specifications, the upper line must be extended by  $0.5^\circ$  to the top, and the lower line by  $0.5^\circ$  to the bottom.

If the measured values are not within the tolerance range, then check the breaker-plate assembly and the tie rod for freedom of movement.

After reaching the end of advance, an increase in the vacuum must not result in any further advance.

#### Advance curve with "adjustment base" (19)

After the zero-point adjustment of the distributor test bench (scale ring) it is possible, with increasing vacuum, for there already to be a slight advance (max.  $0.5^\circ$ ) although the actual vacuum advance only starts at point 8/9.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 4 = Gauge pressure
- 6 = Negative gauge pressure (vacuum) retard
- 7 = Gauge pressure retard
- 8/9, 12/13 = Start of vacuum/overpressure advance with double retard
- 10/11, 14/15 = End of vacuum/overpressure advance with double retard
- 19 = "Adjustment base"

**D4**

Testing

Ignition distributors 0 237..., ZV-H



**D5**

Testing

Ignition distributors 0 237..., ZV-H



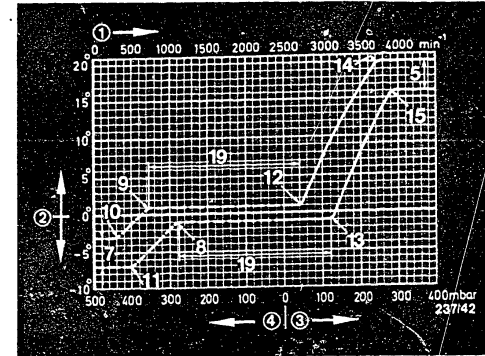
Further example of an advance curve, e.g. vacuum advance

Advance curve with "adjustment base" (19)

After the zero-point adjustment of the distributor test bench (scale ring) it is possible, with increasing vacuum, for there to be a slight advance (max.  $0.5^\circ$ ) although the actual vacuum advance only starts at point 12/13.

#### Note

The double unit with one connecting pipe advances when vacuum is applied to it and retards when overpressure is applied to it.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 4 = Gauge pressure
- 5 = Negative gauge pressure (vacuum) advance
- 7 = Gauge pressure retard
- 8/9, 12/13 = Start of vacuum/overpressure advance with advance/retard
- 10/11, 14/15 = End of vacuum/overpressure advance
- 19 = "Adjustment base"

**D6**

Testing

Ignition distributor 0 237 ..., ZV-H

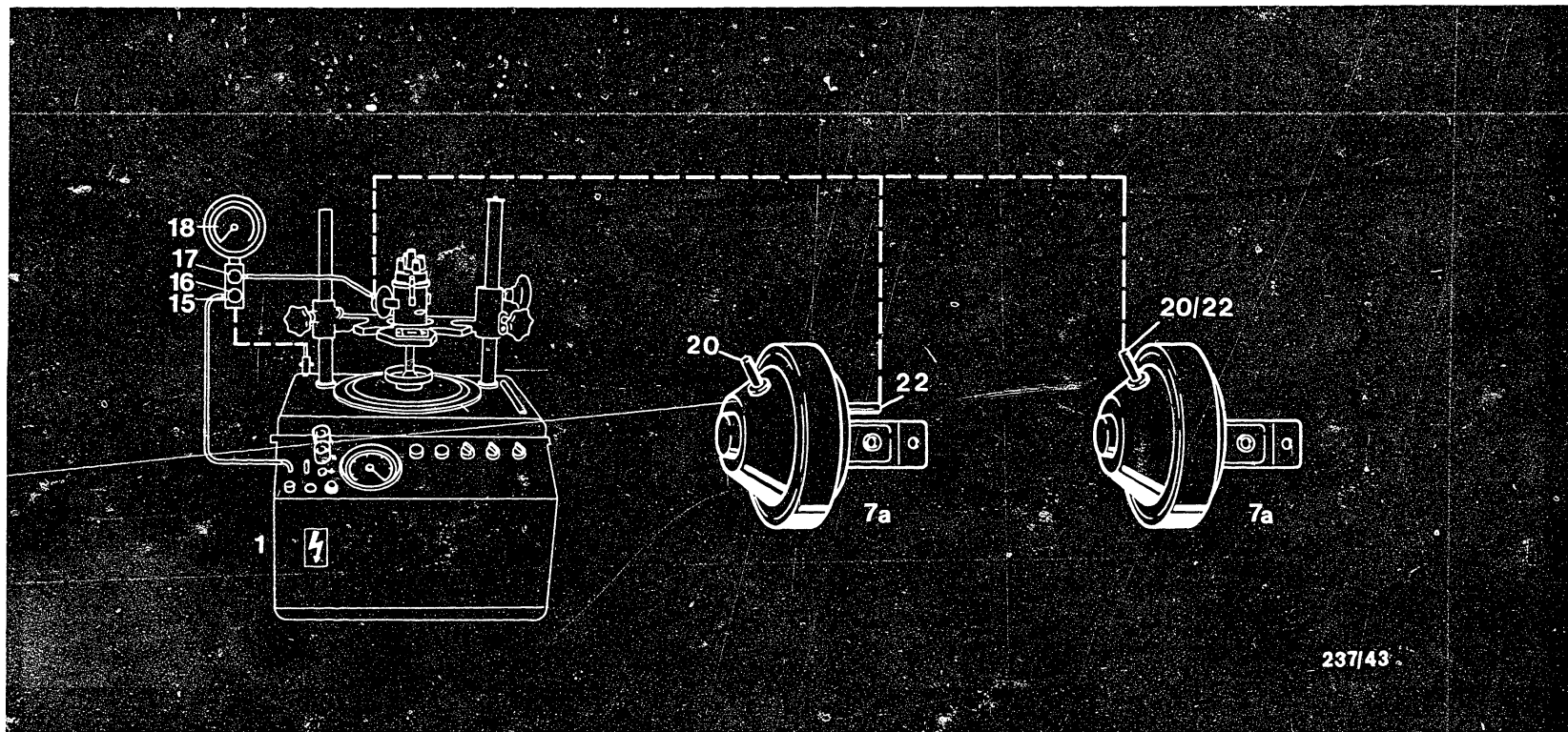


**D7**

Testing

Ignition distributor 0 237 ..., ZV-H





237/43

1 = Distributor test bench  
7a = Vacuum/overpressure unit  
15 = Adjustment throttle

16 = Adjusting screw  
17 = Screw plug  
18 = Pressure gauge

20 = Vacuum connection "retard"  
22 = Overpressure connection "retard"

### 5.8.3 Testing the overpressure advance

Connect the overpressure connection of the distributor test bench to the lower connection of the adjustment throttle. Connect the overpressure connection of the ignition distributor to the upper connection of the adjustment throttle. See connection diagram above.

**Note:** Adjusting screw (16) is for setting the pressure. If a pressure of 1.2 bar is not reached, then screw out the adjusting screw (16) and coat the thread with tough grease. Re-fit the adjusting screw (16).  
The screw plug (17) is open while testing.

**D8**

Testing

Ignition distributor 0 237 ..., ZV-H



**D9**

Testing

Ignition distributor 0 237 ..., ZV-H



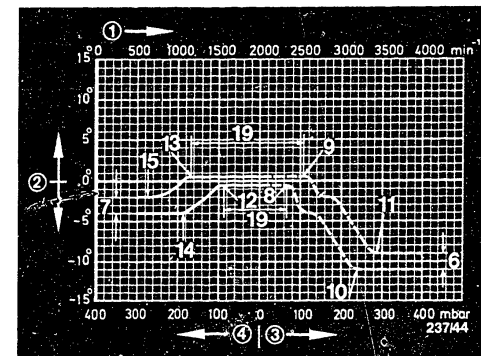
Further example of an advance curve, e.g. overpressure retard

Advance curve with "adjustment base" (19)

After the zero-point adjustment of the distributor test bench (scale ring) it is possible, with increasing overpressure, for there already to be a slight advance (max.  $0.5^\circ$ ) although the actual overpressure advance only starts at point 8/9.

Note: The double unit with one connecting pipe advances when vacuum is applied to it and retards when overpressure is applied to it.

Switch off the voltage supply.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 4 = Gauge pressure
- 5 = Negative gauge pressure (vacuum) advance
- 7 = Gauge pressure retard
- 8/9, 12/13 = Start of vacuum/overpressure advance with advance/retard
- 10/11, 14/15 = End of vacuum/overpressure advance
- 19 = "Adjustment base"

D10

Testing

Ignition distributor 0 237 ..., ZV-H



D11

Testing

Ignition distributor 0 237 ..., ZV-H



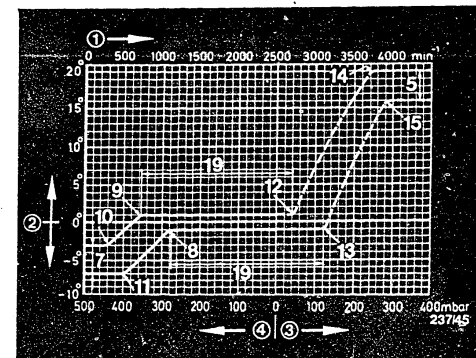
With increasing overpressure, check whether the advance angle is within the stated tolerance range. See figure for example.

If an addition to the tolerance range of  $\pm 0.5^\circ$  is given in the test specifications, the upper line must be extended by  $0.5^\circ$  to the top and the lower line by  $0.5^\circ$  to the bottom. If the measured values are not within the tolerance range, check the breaker-plate assembly and tie rod for freedom of movement.

After reaching the end of advance, an increase in the overpressure must not result in any further advance.

#### Advance curve with "adjustment base" (19)

After the zero-point adjustment of the distributor test bench (scale ring) it is possible, with increasing overpressure, for there already to be a slight advance (max.  $6.5^\circ$ ) although the actual overpressure advance only starts at point 12/13.



- 1 = Distributor-shaft speed
- 2 = Distributor-shaft advance
- 3 = Negative gauge pressure (vacuum)
- 4 = Gauge pressure
- 6 = Negative gauge pressure (vacuum) retard
- 7 = Gauge pressure retard
- 8/9, 12/13 = Start of vacuum/overpressure advance with double retard
- 10/11, 14/15 = End of vacuum/overpressure advance with double retard
- 19 = "Adjustment base"

**D12**

Testing

Ignition distributor 0 237 ..., ZV-H

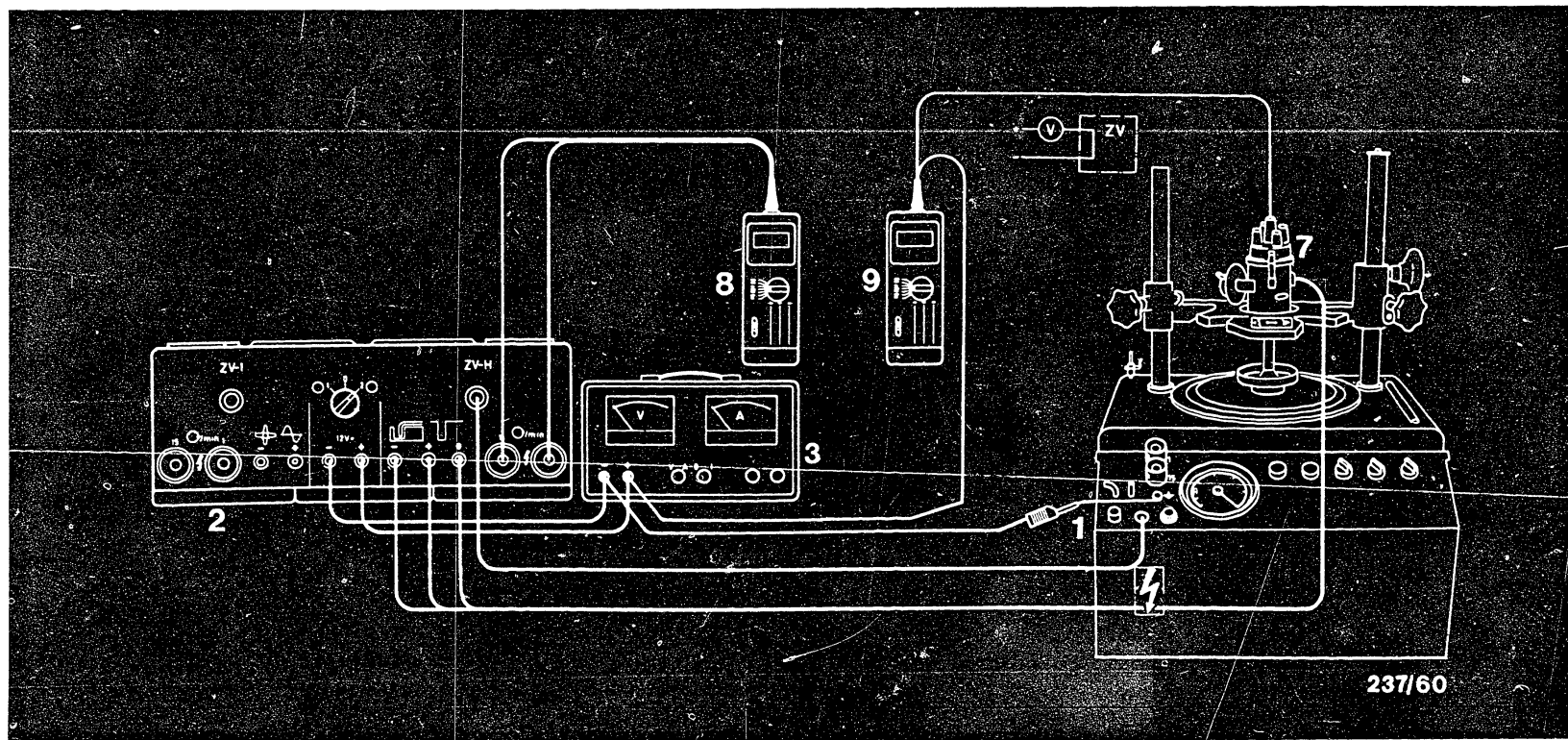


**D13**

Testing

Ignition distributor 0 237 ..., ZV-H





#### Terminal diagram

1 = Distributor test bench

2 = Distributor test adapter (ZV-H)

3 = Voltage stabilizer/battery

7 = Ignition distributor

8 = Tachometer

9 = Voltmeter

#### 6. Testing the engine-speed limiter (test specifications VDT-W. 237/1001)

Mount the ignition distributor and connect to testers in accordance with above terminal diagram. Follow the operating instructions of the individual testers.

Switch on the 12V voltage supply.

Drive the ignition distributor at the specified speed.

The engine-speed limiter is O.K. if, up to the specified minimum speed, the voltmeter does not indicate voltage and if, as of the specified max. speed, it indicates voltage.

Switch off the voltage supply.

**D14**

Testing

Ignition distributor 0 237 ..., ZV-H



**D15**

Testing

Ignition distributor 0 237 ..., ZV-H



7. List of test specifications with advance curves for  
breakerless ignition distributors 0 237 ..

The part numbers of the ignition distributors are given in ascending order. They are followed by the number of the appropriate microfiche with the coordinate number.

Part number of distributor	As of FD	See microfiche W-237/	Coordinate
0 237 320 001		1001	K 1
002		1001	K 2
003		1001	K 3
004		1001	K 4
005		1001	K 5
006		1001	K 6



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